

6.2 GOA Groundfish

EFH definition for GOA Walleye Pollock

Eggs (duration to 14 days)- Level 1

Pelagic waters along the inner, middle, and outer continental shelf and the upper slope in the Gulf of Alaska from Dixon Entrance to 170°E. Spawning concentrations occur in Shelikof Strait (late March), in the Shumagin Islands (early March), the east side of Kodiak Island and near Prince William Sound. Oceanographic features that eggs may be associated with are gyres.

Larvae (duration 14-60 days)-Level 1

Epipelagic waters of the water column along the middle and outer continental shelf in the Gulf of Alaska from Dixon Entrance to 170°E. Feeding areas are those that contain copepod, naupli and small euphausiids. Oceanographic features that larvae may be associated with are gyres and fronts.

Juveniles (.4-4.5 years)- Level 1

Pelagic waters along the inner, mid and outer continental shelf in the Gulf of Alaska from Dixon Entrance to 170°E. Feeding areas are those that contain pelagic crustaceans, copepods and euphausiids. Oceanographic features that juveniles may be associated with are fronts and the thermocline.

Adults (4.5+ years)- Level 2

Pelagic waters from 70-200m along the outer continental shelf and basin in the Gulf of Alaska from Dixon Entrance to 170°E. Feeding areas are those that contain pelagic crustaceans and fish. Oceanographic features that adults are associated with are fronts and upwelling. Spawning concentrations occur in Shelikof Strait, in the Shumagin Islands, the east side of Kodiak Island and near Prince William Sound in late winter. Area in GOA where greatest abundance occurs are between 147°E to 170°E at depths less than 300m.

EFH definition for GOA Pacific cod

Eggs (duration 15-20 days)-Level 0_a

Areas of mud, sandy mud, muddy sand and sand along the inner, middle and outer continental of the Gulf of Alaska from Dixon Entrance to 170°E in winter and spring.

Larvae (duration unknown)-Level 0_a

Epipelagic waters of the Gulf of Alaska from Dixon Entrance to 170°W in winter and spring.

Early Juveniles(up to 2 years)-Level 0_a

Areas of mud, sandy mud, muddy sand and sand along the inner and middle continental shelf and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing small invertebrates (e.g., mysids, euphausiids and shrimp).

Late Juveniles(2-5 years)-Level 1

Areas of mud, sandy mud, muddy sand and sand along the inner and middle continental shelf and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170°E. Feeding areas are those containing pollock, flatfish, and crab.

Adults(5+ years)- Level 2

Areas of mud, sandy mud, muddy sand and sand along the inner, middle and outer continental shelf up to 500m and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170EW. Feeding areas are those containing pollock, flatfish, and crab. Spawning occurs in January-May.

EFH definition for GOA Deep water flatfish, Dover sole**Eggs- Level 0_a**

Pelagic waters along the inner, middle and outer continental shelf, during spring and summer, of the Gulf of Alaska from Dixon Entrance to 170EW.

Larvae(duration up to 2 years)-Level 0_a

Pelagic waters along the inner, middle and outer continental shelf and upper slope of the Gulf of Alaska from Dixon Entrance to 170EW.

Early Juveniles (up to 3years)-Level 0_a

Areas of sand and mud along the inner and middle continental slope and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170EW. Feeding areas are those containing polychaetes, amphipods and annelids.

Late Juveniles (3-5 years)-Level 0_a

Areas of sand and mud along the inner and middle continental slope and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170E W. Feeding areas are those containing polychaetes, amphipods and annelids.

Adults (5+ years)-Level 1

Areas of sand and mud along the middle to outer continental shelf and upper slope deeper than 300m and the lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170E W. Winter and spring spawning and summer feeding on soft substrates (sand and mud) of the continental shelf and upper slope and a shallower summer distribution mainly on the middle to outer portion of the shelf and upper slope. Feeding areas are those containing polychaetes, amphipods, annelids and mollusks.

EFH Definition for GOA Shallow water complex, Yellowfin Sole**Eggs (duration unknown) - Level 0_a**

Pelagic inshore waters of the central and western GOA during summer months.

Larvae (duration 2-3 months) - Level 0_a

Pelagic inshore waters and inner continental shelf regions of the central and western GOA during summer and autumn months.

Early Juveniles (to 5.5 years old) - Level 0_a

Demersal areas (bottom and lower portion of the water column) on the inner, middle and outer portions of the continental shelf (down to 250 m) and within nearshore bays of the central and western GOA.

Late Juveniles (5.5 - 9 years old) - Level 1

Areas of sandy bottom along with the lower portion of the water column within nearshore bays and on the inner, middle and outer portions of the continental shelf (down to 250 m) of the central and western GOA. Feeding areas would be those containing polychaetes, bivalves, amphipods and echinurids.

Adults (9+ years old) - Level 2

Areas of sandy bottom along with the lower portion of the water column on the inner, middle and outer portions of the continental shelf (down to 250 m) of the central and western GOA. Areas of known concentrations vary seasonally (known for the Bering Sea). Adult spawning areas known for the eastern Bering Sea (see Bering Sea EFH definition). Summer (June-October) feeding concentrations of adults known in the Bering Sea. Feeding areas would be those containing polychaetes, bivalves, amphipods and echinurids. In winter, yellowfin sole adults migrate to deeper waters of the shelf (100-200 m) south of 60°E N to the Alaskan Peninsula.

EFH Definition for GOA Shallow water complex, Rock Sole**Eggs (duration unknown) - Level 0_a**

Areas of pebbles and sand at depths of 125-250 m in winter (December-March) along the shelf-slope break in the GOA from Dixon Entrance to 170°W.

Larvae (duration 2-3 months) - Level 0_a

Pelagic waters of the GOA from Dixon Entrance to 170°W over the inner, middle and outer portions of the continental shelf and the slope.

Early Juveniles (to 3.5 years old) - Level 0_a

Inner, middle and outer portions of the continental shelf (down to 250 m) of the Gulf of Alaska and the lower portion of the water column from Dixon Entrance to 170°W. Feeding areas would be those containing polychaetes, bivalves, amphipods and crustaceans.

Late Juveniles (3.5 - 8 years old) - Level 1

Areas of pebbles and sand and the lower portion of the water column within nearshore bays and on the inner, middle and outer portions of the continental shelf (down to 250 m) of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas would be those containing polychaetes, bivalves, amphipods and crustaceans.

Adults (8+ years old) - Level 2

Areas of pebbles and sand and the lower portion of the water column on the inner, middle and outer portions of the continental shelf (down to 250 m) of the GOA from Dixon Entrance to 170°E W. Areas of known concentrations vary seasonally and include adult spawning areas in winter (see Eggs/Spawning Adults) and feeding areas in summer (May-October) in the Bering Sea (see BSAI EFH definition). Feeding areas would be those containing polychaetes, bivalves, amphipods and crustaceans.

EFH definition for GOA Rex sole

Eggs-Level 0_a

Pelagic waters of the inner, middle, and outer continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W during the months between February and July.

Larvae-Level 0_a

Pelagic waters of the inner, middle, and outer continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W during the spring and summer months.

Juveniles (up to 2 years)-Level 0_a

Areas of gravel, sand and mud along the inner, middle to outer continental shelf deeper than 300m, and the lower portion of the water column, of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing polychaetes, amphipods, euphausiids and Tanner crab.

Adults(2+ years)-Level 1

Areas of gravel, sand and mud along the inner, middle to outer continental shelf deeper than 300m, and the lower portion of the water column, of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing polychaetes, amphipods, euphausiids and Tanner crab. Spawning occurs from February through July along areas of sand, mud and gravel substrates of the continental shelf.

EFH definition for GOA Flathead sole

Eggs (duration unknown)-Level 0_a

Pelagic waters (January-April) along the inner, middle and outer continental shelf in the Gulf of Alaska from Dixon Entrance to 170°W.

Larvae (duration unknown)-Level 0_a

Pelagic waters along the inner, middle and outer continental shelf in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing phytoplankton and zooplankton.

Juveniles (2-3 years)-Level 1

Areas of sand and mud along the inner, middle and outer continental shelf and upper slope and the lower portion of the water column in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing polychaetes, bivalves, ophiuroids, pollock and small tanner crab.

Adults (3+ years)-Level 2

Areas of sand and mud along the inner, middle and outer continental shelf and upper slope and the lower portion of the water column, in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas, primarily on the inner, middle and outer shelf in spring, summer and fall, are those containing polychaetes, bivalves, ophiuroids, pollock, small tanner crab and other crustaceans. Spawning areas in winter and early spring are located primarily on the outer shelf.

EFH definition for GOA Arrowtooth flounder

Eggs (duration unknown)-Level 0_a

Pelagic waters (November - March) along the inner, middle, and outer continental shelf in the Gulf of

Alaska from Dixon Entrance to 170°W.

Larvae(duration 2-3 months)-Level 0_a

Pelagic waters along the inner and outer continental shelf and nearshore bays during spring and summer in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those that contain phytoplankton and zooplankton.

Early Juveniles (to 2 years old)-Level 0_a

Areas of gravel, mud, and sand and the water column of the inner continental shelf and adjacent nearshore bays in the Gulf of Alaska from Dixon Entrance to 170°W.

Late Juveniles (1-4 yrs.)-Level 1

Areas of gravel, mud, and sand along the inner, middle, and outer continental shelf and upper slope and the lower portion of the water column in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those that contain euphausiids, crustaceans, amphipods and pollock.

Adults (4+ years)-Level 2

Areas of gravel, mud, and sand along the inner, middle, and outer continental shelf, upper slope and nearshore bays and the lower portion of the water column in the Gulf of Alaska from Dixon Entrance to 170°W. Summer feeding areas on the middle and outer shelf would be those containing gadids, euphausiids, and other fish. Spawning areas in winter are on the outer shelf and upper slope regions.

EFH definition for GOA Sablefish

Eggs (duration 14-20 days)- Level 0_a

Pelagic waters of the continental shelf and in basin areas from 200-3000m extending to the seaward boundaries of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W from late winter to early spring (December-April) .

Larvae (duration up to 3 months)-Level 0_a

Epipelagic waters of the middle to outer continental shelf, the slope and basin areas of the Gulf of Alaska from Dixon Entrance to 170°W during late spring-early summer months (April - July).

Early Juveniles (up to 2 years)- Level 0_a

Pelagic waters, during first summer, along the outer, middle, and inner continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W. Areas of soft-bottom in nearshore bays and island passes in the demersal, semi-demersal regions, after the first summer till end of second summer.

Late Juveniles (2-5 years)- Level 1

Areas of soft bottom generally deeper than 100m and associated with the continental slope and deep shelf gulley and fjords (presumably demersal within the lower portion of the water column) of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing mesopelagic and benthic fishes, benthic invertebrates and jellyfish.

Adults (5+years)- Level 2

Areas of soft bottom deeper than 200m (presumably within the lower portion of the water column) associated with the continental slope and deep shelf gulley and fjords (such as Prince William Sound and

those in southeastern Alaska) of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas would be those containing mesopelagic and benthic fishes, benthic invertebrates and jellyfish. A large portion of the adult diet is comprised of gadid fishes mainly pollock.

EFH definition for GOA Slope rockfish, Pacific Ocean Perch

Eggs (internal incubation, ~90days) No EFH definition determined.

Internal fertilization and incubation. Incubation is assumed to occur during the winter months.

Larvae (duration 60-180 days)- Level 0_a

Pelagic waters of the inner, middle to outer continental shelf, the upper and lower slope and the basin areas extending to the seaward boundary of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W, during the spring and summer months.

Early Juveniles (larval stage to 3 years) - Level 0_a

Initially pelagic, then demersal in very rocky areas of the inner continental shelf of the Gulf of Alaska from Dixon Entrance to 170 degrees W.

Late Juveniles (3 to 10 years) - Level 1

Areas of cobble, gravel, mud, sandy mud and muddy sand along the inner, middle to outer continental shelf and upper slope areas, shallower than adults, middle to lower portion of the water column, of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing euphausiids.

Adults (10+ years)- Level 1

Areas of cobble, gravel, mud, sandy mud or muddy sand along the outer continental shelf and upper slope areas from 180-420m (actual depths sampled) of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing euphausiids. Areas of high concentrations tend to vary seasonally and may be related to spawning behavior, in summer adults inhabit shallower depths (180-250m) and in the fall they migrate farther offshore (300-420m).

EFH definition for GOA slope rockfish, Shortraker and Rougheye rockfish

Eggs- No EFH definition determined.

Internal fertilization and incubation.

Larvae- Level 0_b

Pelagic waters of the inner, middle, and outer continental shelf, the upper and lower slope and the basin areas extending to the seaward boundary of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W, during the spring and summer months.

Early Juveniles (up to 20 cm) - Level 0_{a-b}

Between nearshore waters and outer continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W.

Late Juveniles (greater than 20 cm) - Level 0_b and level 1

Areas shallower than adult along the continental shelf of the Gulf of Alaska (includes substrate and water column) from Dixon Entrance to 170°W. Juvenile shortraker rockfish have been observed on only a few

rare occasions. Presence presumed somewhere between nearshore and outer continental shelf between Dixon Entrance and 170°W.

Adults (15+ years)-Level 1

Areas of mud, sand, rock, sandy mud, cobble, muddy sand and gravel at depths ranging from 200-500 m and the lower third of the water column, of the outer continental shelf and the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W. Fishery concentrations at 300-500m. Feeding areas would be those areas where shrimps, squid and myctophids occur.

EFH definition for GOA slope rockfish, Northern rockfish

Eggs-No EFH definition determined.

Internal fertilization and incubation.

Larvae- Level 0_b

Pelagic waters of the inner, middle to outer continental shelf, the upper and lower slope and the basin areas extending to the seaward boundary of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W, during the spring and summer months.

Early juveniles (up to 25cm)-Level 0_b

Pelagic waters of the inner, middle to outer continental slope, of the Gulf of Alaska from Dixon Entrance to 170°W.

Late Juveniles (greater than 25cm)-Level 1

Areas of cobble and rock along the shallower regions (relative to adults) of the outer continental shelf and the middle and lower portions of the water column of the Gulf of Alaska from Dixon Entrance to 170°W.

Adults (13+ years)-Level 1

Areas of cobble and rock along the outer continental slope and upper slope regions and the middle and lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170°W. Areas of relatively shallow banks of the outer continental shelf have been found to have concentrated populations.

EFH definition for GOA Pelagic shelf rockfish, Dusky rockfish

Eggs-No EFH definition determined.

Internal fertilization and incubation.

Larvae- Level 0_b

Pelagic waters of the inner, middle to outer continental shelf, the upper and lower slope and the basin areas extending to the seaward boundary of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W, during the spring and summer months.

Early juveniles (less than 25cm)-Level 0_b

Pelagic waters of the inner, middle, and outer continental shelf of the Gulf of Alaska from Dixon Entrance

to 170°W.

Late Juveniles (greater than 25cm)- Level 0_a

Areas of cobble, rock and gravel along the inner, middle, and outer continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W. Location in water column is currently unknown.

Adults (up to 50 years)-Level 1

Areas of cobble, rock and gravel along the outer continental shelf and upper slope region and the middle to lower portion of the water column of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing euphausiids. Also found in nearshore waters of Southeast Alaska along rocky shores at depths less than 50m.

EFH definition for GOA Demersal shelf rockfish, Yelloweye rockfish

Eggs- No EFH definition determined.

Internal fertilization and incubation

Larvae (< 6months)-Level 0_b

Epipelagic areas of the water column of the Gulf of Alaska from Dixon Entrance to 170°W during the spring and summer months.

Early Juveniles (to 10yrs.)-Level 0_a

Areas of rock and coral along the inner, middle and outer continental shelf, bays and island passages and the entire water column of the Gulf of Alaska from Dixon Entrance to 170°W. Concentrations of young juveniles (2.5-10cm) have been observed in areas of high relief (such as vertical walls, cloud sponges, fjord-like areas).

Late Juveniles (10-18yrs)- Level 1

Areas of rock and coral along the inner, middle and outer continental shelf, nearshore bays and island passages of the Gulf of Alaska from Dixon Entrance to 170°W and the lower portion of the water column. High concentrations are found associated with high relief with refuge spaces such as overhangs, crevices and caves.

Adults (18+ years)- Level 1

Areas of rock, coral and cobble along the inner, middle and outer continental shelf, upper slope, nearshore bays and island passages of the Gulf of Alaska from Dixon Entrance to 170°W from and the lower portion of the water column. High concentrations are found associated with high relief containing refuge spaces such as overhangs, crevices and caves. Feeding areas are those containing fish, shrimp and crab.

EFH definition for GOA Thornyhead rockfish

Eggs- Level 0_a

Pelagic waters of the Gulf of Alaska from Dixon Entrance to 170°W during the late winter and early spring.

Larvae (<15months)- Level 0_a

Pelagic waters extending to the seaward boundary of the EEZ of the Gulf of Alaska from Dixon Entrance to 170°W during the early spring through summer.

Juveniles(> 15 months)- Level 0_a

Areas of mud, sand, rock, sandy mud, cobble, muddy sand and gravel and the lower portion of the water column along the middle and outer continental shelf and upper slope of the Gulf of Alaska from Dixon Entrance to 170°W.

Adults- Level 1

Areas of mud, sand, rock, sandy mud, cobble, muddy sand and gravel and the lower portion of the water column along the middle and outer continental shelf and upper and lower slope of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing shrimp, fish (cottids), and small crabs.

EFH definition for GOA Atka mackerel**Eggs (40-45 days)-Level 0_a**

Areas of gravel, rock and kelp in shallow waters, island passes and the inner continental shelf of the Gulf of Alaska from Kodiak Island to 170°W.

Larvae (up to 6 months)-Level 0_a

Epipelagic waters of the middle and outer continental shelf, slope and extending seaward to the edge of the EEZ in the Gulf of Alaska from Kodiak Island to 170°W.

Juveniles (up to 2 years)-Level 0_a

Unknown habitat association; assumed to settle near areas inhabited by adults, but have not been observed in fishery or surveys.

Adults- Level 1

Areas of gravel, rock and kelp on the inner, middle and outer continental shelf and the entire water column (to the surface) in the Gulf of Alaska from Kodiak Island to 170°W. Feeding areas are those containing copepods, euphausiids and meso-pelagic fish (myctophids). Spawning occurs in nearshore (inner shelf and in island passes) rocky areas and in kelp in shallow waters in summer and early. Move to offshore deeper areas nearby in winter. Perform diurnal/tidal movements between demersal and pelagic areas.

EFH Definition for GOA Other species-Sculpins**Eggs - Level 0_a**

All substrate types on the inner, middle and outer continental shelf of the Gulf of Alaska from Dixon Entrance to 170°W. Some species deposit eggs in rocky shallow waters near shore.

Larvae- Level 0_a

Pelagic waters of the inner, middle and outer continental shelf and slope of the Gulf of Alaska from Dixon Entrance to 170°W, predominately over the inner and middle shelf.

Juveniles - Level 0_a

Broad range of demersal habitats from intertidal pools, all shelf substrates (mud, sand, gravel, etc.) and rocky areas of the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W.

Adults - Level 1

Broad range of demersal habitats from intertidal pools, all shelf substrates (mud, sand, gravel, etc.) and rocky areas of the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W.

EFH definition for GOA other species-Skates

Eggs-Level 0_a

All bottom substrates of the upper slope and across the shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Larvae- No EFH definition determined.

Not applicable (no larval stage)

Juveniles-Level 0_a

Broad range of substrate types (mud, sand, gravel, and rock) and the water column on the shelf and the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W.

Adults- Level 1

Broad range of substrate types (mud, sand, gravel, and rock) and the lower portion of the water column on the shelf and the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W.

EFH Definition for GOA Other Species -Sharks

Eggs - No EFH definition determined.

Not applicable (most are oviparous)

Larvae - No EFH definition determined.

Not applicable (most species are oviparous/ no larval stage)

Juveniles and Adults-Level 0_a

All waters and substrate types in the inner, middle and outer continental shelf and slope of the Gulf of Alaska from Dixon Entrance to 170°W to the seaward edge of the EEZ.

EFH Definition for GOA Other Species -Octopus

Eggs-Level 0_a

All bottom substrates of the shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Larvae- No EFH definition determined.

Not applicable (no larval stage)

Juveniles and Adults-Level 0_a

Broad range of substrate types (mostly rock, gravel, and sand) and the lower portion of the water column on the shelf and the upper slope of the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are

those containing crustaceans and molluscs.

EFH Definition for GOA Squid - Red Squid

Eggs-Level 0_a

Areas of mud and sand on the upper and lower slope Gulf of Alaska from Dixon Entrance to 170°W.

Larvae - No EFH definition determined.

Not applicable (no larval stage)

Juveniles and Adults-Level 0_a

Pelagic waters of the shelf, slope and basin to the seaward edge of the EEZ in the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas are those containing euphausiids, shrimp, forage fish, and other cephalopods.

EFH Definition for GOA Forage fish complex, Eulachon

Eggs (duration 30-40 days) - Level 0_a

Bottom substrates of sand, gravel and cobble in rivers during April-June.

Larvae (duration 1-2 months) - Level 0_a

Pelagic waters of the inner continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Juveniles (to 3 years of age) - Level 0_a

Pelagic waters of the middle and outer continental shelf and upper slope throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Adults (3+ years)- Level 0_a

Pelagic waters of the middle to outer continental shelf and upper slope throughout the Gulf of Alaska from Dixon Entrance to 170°W for non-spawning fishes (July-April). Feeding areas are those containing euphausiids and copepods. Rivers during spawning (April-June).

EFH Definition for GOA Forage fish complex, Capelin

Eggs (duration 2-3 weeks) - Level 0_a

Sand and cobble intertidal beaches down to 10 m depth along the shores of the Gulf of Alaska from Dixon Entrance to 170°W during May-August.

Larvae (duration 4-8 months) - Level 0_a

Epipelagic waters of the inner and middle continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Juveniles (1-2 yrs)- Level 0_a

Pelagic waters of the inner and middle continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W. May be associated with fronts in winter.

Adults(2+ yrs)- Level 0_a

Pelagic waters of the inner, middle and outer continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W during their non-spawning cycle (September-April). Populations associated with fronts in winter. Intertidal beaches of sand and cobble down to 10 m depth during spawning (May-August).

EFH Definition for GOA Forage fish complex, Sand lance

Eggs (3-6 weeks) - Level 0_a

Bottom substrate of sand to sandy gravel along the inner continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Larvae (100-131 days) - Level 0_a

Pelagic and neustonic waters along the inner continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Juveniles - Level 0_a

Soft bottom substrates (sand, mud) and the entire water column of the inner and middle continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas contain zooplankton, calanoid copepods, mysid shrimps crustacean larvae, gammarid amphipods and chaetognaths.

Adults- Level 0_a

Soft bottom substrates (sand, mud) and the entire water column of the inner and middle continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W. Feeding areas contain zooplankton, calanoid copepods, mysid shrimps crustacean larvae, gammarid amphipods and chaetognaths.

EFH Definition for GOA Forage fish complex, Myctophids and Bathylagids

Eggs - Level 0_c - No EFH definition determined

No information available at this time.

Larvae - Level 0_c - No EFH definition determined

No information available at this time.

Juveniles - Level 0_a

Pelagic waters ranging from near surface to lower portion of water column of the slope and basin regions throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ.

Adults- Level 0_a

Pelagic waters ranging from near surface to lower portion of water column of the slope and basin regions throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ.

EFH Definition for GOA Forage fish complex, Sand fish

Eggs - Level 0_a

Egg masses attached to rock in nearshore areas throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Larvae - Level 0_c - No EFH definition determined

No information available at this time.

Juveniles - Level 0_a

Bottom substrates of mud and sand of the inner continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

Adults- Level 0_a

Bottom substrates of mud and sand of the inner continental shelf throughout the Gulf of Alaska from Dixon Entrance to 170°W.

EFH Definition for GOA Forage fish complex, Euphausiids

Eggs - Level 0_a

Neustonic waters throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ in spring.

Larvae - Level 0_a

Epipelagic waters throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ in spring.

Juveniles - Level 0_a

Pelagic waters throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ. Dense populations are associated with upwelling or nutrient-rich areas, such as the edge of the continental shelf, heads of submarine canyons, edges of gullies on the continental shelf, in island passes in the Aleutian Islands and over submerged seamounts.

Adults- Level 0_a

Pelagic waters throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ. Dense populations are associated with upwelling or nutrient-rich areas, such as the edge of the continental shelf, heads of submarine canyons, edges of gullies on the continental shelf, in island passes in the Aleutian Islands, and over submerged seamounts.

EFH Definition for GOA Forage fish complex, Pholids and Stichaeids

Eggs - Level 0_c - No EFH definition determined

No information available at this time.

Larvae - Level 0_c - No EFH definition determined

No information available at this time.

Juveniles - Level 0_a

Intertidal to demersal waters of the inner continental shelf with mud substrate throughout the Gulf of Alaska from Dixon Entrance to 170°W. Certain species are associated with vegetation such as eelgrass and kelp.

Adults- Level 0_a

Intertidal to demersal waters of the inner continental shelf with mud substrate throughout the Gulf of Alaska from Dixon Entrance to 170°W. Certain species are associated with vegetation such as eelgrass and kelp.

EFH Definition for GOA Forage fish complex, Gonostomatids**Eggs - Level 0_c - No EFH definition determined**

No information is available at this time.

Larvae - Level 0_c - No EFH definition determined

No information is available at this time.

Juveniles - Level 0_c - No EFH definition determined

No information is available at this time.

Adults- Level 0_a

Bathypelagic waters throughout the Gulf of Alaska from Dixon Entrance to 170°W and to the seaward extent of the EEZ.

Figure 6.1 Geographic references used in the descriptions and identification of EFH for groundfish in the GOA and BSAI. ([See table of contents for map](#))

Figure 6.2 NMFS management areas for the GOA and BSAI regions. ([See table of contents for map](#))

[See table of contents for the following tables:](#)

Table 6.1 Summary of habitat associations for groundfish in the BSAI and GOA.

Table 6.2 Summary of biological associations for groundfish in the BSAI and GOA.

Table 6.3 Summary of reproductive traits for groundfish in the BSAI and GOA.

[See table of contents for the following maps:](#)

[Walleye Pollock \(eggs\)](#)

[Walleye Pollock \(larvae\)](#)

[Walleye Pollock \(juveniles\)](#)

Walleye Pollock (adults)

Pacific Cod (adults and late juveniles)

Dover Sole (adults and late juveniles)

Yellowfin Sole (adults and late juveniles)

Rock Sole (adults and late juveniles)

Rex Sole (adults and late juveniles)

Flathead Sole (adults and late juveniles)

Arrowtooth Flounder (adults and late juveniles)

Sablefish (adults and late juveniles)

Pacific Ocean Perch (adults and late juveniles)

Shortraker and Rougheye Rockfish (adults and late juveniles)

Northern Rockfish (adults and late juveniles)

Dusky Rockfish (adults and late juveniles)

Yelloweye Rockfish (adults and late juveniles)

Thornyhead Rockfish (adults and late juveniles)

Atka Mackerel (adults and late juveniles)

Sculpins spp. (adults and late juveniles)

Skates spp. (adults and late juveniles)